APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,989	10/17/2003	Padma Pillay Esnault	1014-071US01/JNP-0317	1401

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EXAMINER
RICHARDSON, THOMAS W

ART UNIT	PAPER NUMBER
4121	

NOTIFICATION DATE	DELIVERY MODE
12/27/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@ssiplaw.com

	Application No.	Applicant(s)
Office Action Summary	10/687,989	PILLAY ESNAULT, PADMA
	Examiner	Art Unit	
	THOMAS RICHARDSON	4121	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *17 October 2003*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-41* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) *11-15,18-26 and 33-41* is/are allowed.

6) ☒ Claim(s) *1,2,5,6,9,16,27 and 31* is/are rejected.

7) ☒ Claim(s) *3,4,7,8,10,17,28-30 and 32* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *17 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

    1. ☐ Certified copies of the priority documents have been received.

    2. ☐ Certified copies of the priority documents have been received in Application No. _____.

    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claims 1-41 are pending for examination.

Claims 1-41 are rejected.

Specification

1.   Claims 10, 24, and 32 are objected to because of the following

informalities:

> Apparent misspelling of the word "specifies." Word appears as "species" in
>
> the claims.
>
> Also, claims 10 and 32 contain incorrect verb tense. Examiner
>
> recommends changing "associated" to "associates."
>
> Claim 24 contains an improper modifier. "A plurality of a prefix counters…"

2.   Appropriate correction is required.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

4.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1,

148 USPQ 459 (1966), that are applied for establishing a background for

determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

> 1.   Determining the scope and contents of the prior art.
> 2.   Ascertaining the differences between the prior art and the claims at
>   issue.
> 3.   Resolving the level of ordinary skill in the pertinent art.

> 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1, 2, 9, 16, 27, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0188018, Guerrero et al and *TCP/IP Network Administration*, Hunt.

6. As per claim 1, Guerrero teaches a method comprising:

> maintaining a count of addresses in a table (page 2, paragraph [0028], where the address counting module counts addresses in the lookup table); and

> rejecting additional addresses when the count exceeds an address limit (page 2, paragraph [0028], where the address counting module rejects updates if the instruction involves adding an address when the memory is full).

Guerrero does not teach a specific routing protocol or type of route to use in his routing update method, only that the addresses may be limited and that additional addresses over a limit can be rejected. Hunt teaches a method of configuring interior gateways wherein a statement announces routes from an external system such that:

> routes are exported to an interior routing protocol (page 10, paragraph 1, where the routes are received via BGP and advertised via OSPF, showing that the addresses were received from an external protocol (BGP) and were exported to an interior protocol (OSPF)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a limiting method such as that taught by Guerrero with a route exporting method such as that taught by Hunt. The limiting method prevents the table from exceeding a defined memory space (rejecting addresses when the table is full, page 2, paragraph [0028]), which prevents overflow. This would be beneficial in any routing scheme, as memory is defined and limited in all computer systems. Hunt's method limits what type of routes are defined in the routing table, which would further limit the routes that could be updated in Guerrero's method. This would allow the table to be updated more quickly, as less updates would have to be processed, which would further progress toward Guerrero's goal of accelerating updating of tables (page 1, paragraph [0012]).

7.   As per claim 2, the combination of Guerrero and Hunt teaches the method of claim 1,

        wherein maintaining a count of routes comprises maintaining a count of
        addresses (page 2, paragraph [0028], where the address counting module
        counts addresses in the lookup table), and

        wherein rejecting additional routes comprises rejecting additional
        addresses when the count exceeds an export limit (page 2, paragraph
        [0028], where the address counting module rejects updates if the
        instruction involves adding an address when the memory is full).

Guerrero does not teach a specific routing protocol or type of route to use in his routing update method, only that the addresses may be limited and that additional addresses over a limit can be rejected. Hunt teaches a method of

configuring interior gateways wherein a statement announces routes from an
external system such that:

> routes exported from an exterior routing protocol to an interior routing
> protocol (Hunt, page 10, paragraph 1, where the routes are received via
> BGP and advertised via OSPF, showing that the addresses were received
> from an external protocol (BGP) and were exported to an interior protocol
> (OSPF)).

It would have been obvious to one of ordinary skill in the art at the time of the
invention to use a limiting method such as that taught by Guerrero with a route
exporting method such as that taught by Hunt. The limiting method prevents the
table from exceeding a defined memory space (rejecting addresses when the
table is full, page 2, paragraph [0028]), which prevents overflow. This would be
beneficial in any routing scheme, as memory is defined and limited in all
computer systems. Hunt's method limits what type of routes are defined in the
routing table, which would further limit the routes that could be updated in
Guerrero's method. This would allow the table to be updated more quickly, as
less updates would have to be processed, which would further progress toward
Guerrero's goal of accelerating updating of tables (page 1, paragraph [0012]).

8.   As per claim 9, the combination of Guerrero and Hunt teaches the method
of claim 1, wherein maintaining a count comprises maintaining respective counts
for instances of the interior routing protocol (page 2, paragraph [0028], where
each lookup table modification device contains an address counting module,

which maintains a count for each instance of the updater), and wherein rejecting

additional routes comprises:

> identifying one of the instances of the interior routing protocol to which the
>
> routes were exported (page 2, paragraph [0028], where the counting
>
> module only counts for the specific instance of the modification device that
>
> it is located on);
>
> comparing the respective count for the identified one of the instances
>
> (page 2, paragraph [0028], where the counting module compares the
>
> count of the address with the maximum limit the table can contain); and
>
> rejecting additional routes exported to the interior routing protocol to the
>
> identified one of the instances based on the comparison (page 2,
>
> paragraph [0028], where the address counting module rejects updates if
>
> the instruction involves adding an address when the memory is full).

9.

10.   As per claim 16, Guerrero teaches a method comprising limiting the

number of addresses exported to a network device (page 2, paragraph [0028],

where the address counting module rejects updates if the instruction involves

adding an address when the memory is full).

Guerrero does not teach a specific routing protocol or type of route to use in his

routing update method, only that the addresses may be limited and that

additional addresses over a limit can be rejected. Hunt teaches a method of

configuring interior gateways wherein a statement announces routes from an

external system such that:

routes exported from an exterior routing protocol to an interior routing

protocol (Hunt, page 10, paragraph 1, where the routes are received via

BGP and advertised via OSPF, showing that the addresses were received

from an external protocol (BGP) and were exported to an interior protocol

(OSPF)).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to use a limiting method such as that taught by Guerrero with a route

exporting method such as that taught by Hunt. The limiting method prevents the

table from exceeding a defined memory space (rejecting addresses when the

table is full, page 2, paragraph [0028]), which prevents overflow. This would be

beneficial in any routing scheme, as memory is defined and limited in all

computer systems. Hunt's method limits what type of routes are defined in the

routing table, which would further limit the routes that could be updated in

Guerrero's method. This would allow the table to be updated more quickly, as

less updates would have to be processed, which would further progress toward

Guerrero's goal of accelerating updating of tables (page 1, paragraph [0012]).

11.   As per claim 27, Guerrero teaches a computer-readable medium

comprising instructions to cause a processor to:

maintain a count of routes (page 2, paragraph [0028], where the address

counting module counts addresses in the lookup table); and

reject additional routes based on the count and a limit (page 2, paragraph

[0028], where the address counting module rejects updates if the

instruction involves adding an address when the memory is full).

Guerrero does not teach a specific routing protocol or type of route to use in his routing update method, only that the addresses may be limited and that additional addresses over a limit can be rejected. Hunt teaches a method of configuring interior gateways wherein a statement announces routes from an external system such that:

> routes exported from an exterior routing protocol to an interior routing protocol (Hunt, page 10, paragraph 1, where the routes are received via BGP and advertised via OSPF, showing that the addresses were received from an external protocol (BGP) and were exported to an interior protocol (OSPF)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a limiting method such as that taught by Guerrero with a route exporting method such as that taught by Hunt. The limiting method prevents the table from exceeding a defined memory space (rejecting addresses when the table is full, page 2, paragraph [0028]), which prevents overflow. This would be beneficial in any routing scheme, as memory is defined and limited in all computer systems. Hunt's method limits what type of routes are defined in the routing table, which would further limit the routes that could be updated in Guerrero's method. This would allow the table to be updated more quickly, as less updates would have to be processed, which would further progress toward Guerrero's goal of accelerating updating of tables (page 1, paragraph [0012]).

12.   As per claim 31, the combination of Guerrero and Hunt teaches the computer-readable medium of claim 27, further comprising instructions to cause the processor to:

> maintain respective counts for instances of the interior routing protocol (page 2, paragraph [0028], where each lookup table modification device contains an address counting module, which maintains a count for each instance of the updater);

> identify one of the instances of the interior routing protocol to which the routes were exported (page 2, paragraph [0028], where the counting module only counts for the specific instance of the modification device that it is located on);

> compare the respective count for the identified one of the instances (page 2, paragraph [0028], where the counting module compares the count of the address with the maximum limit the table can contain); and

> reject additional routes exported from the exterior routing protocol to the identified one of the instances based on the comparison (page 2, paragraph [0028], where the address counting module rejects updates if the instruction involves adding an address when the memory is full).

13.   Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0188018, Guerrero et al and *TCP/IP Network Administration*, Hunt as applied to claims 1 and 17 above, and further in view of US 6 212 188, Rochberger et al.

14.   As per claim 5, the combination of Guerrero and Hunt teaches the method
of claim 1.

Neither reference teaches a method to update the routing information in
response to a state change of the device. Rochberger teaches a method of
routing in a network when a node is in overload state comprising:

> updating routing information to associate the routes with a maximum
> metric when the count exceeds the export limit; and advertising the
> updated routing information to a network device (Column 5, lines 30-35,
> where the overloaded node sends a message to other nodes notifying
> itself as being overloaded).

It would have been obvious to one of ordinary skill in the art at the time of the
invention to include an overload notification such as that described by
Rochberger in a network system such as that taught by Guerrero. Guerrero's
system would benefit, as it could notify other devices when the address limit
within a table has been reached, relieving the processing required for rejecting
additional addresses sent. The notification method described by Rochberger can
be used in any system, as it only describes how a node reacts to being in an
overload state, and does not affect the performance of the node in normal
functions. This would allow the notification method to be used in any system,
including that taught by Guerrero, and with any routing protocols, such as those
taught by Hunt.

15.   As per claim 6, the combination of Guerrero and Hunt teaches the method
of claim 1.

Neither reference teaches a method to update the routing information in
response to a state change of the device. Rochberger teaches a method of
routing in a network when a node is in overload state comprising:

> updating routing information to set an overload bit of a link state prefix
> associated with the routes when the count exceeds the export limit
> (Column 2, lines 8-14, where the state information is contained in PTSE
> messages. Along with column 5, lines 30-35, where the overloaded node
> sends a PTSE message to other nodes notifying itself as being
> overloaded, it is inherent that the PTSE contains the overload information,
> and is changed when the node goes into overload status); and
> advertising the updated routing information to a network device (Column
> 5, lines 30-35, where the overloaded node sends a message to other
> nodes notifying itself as being overloaded).

It would have been obvious to one of ordinary skill in the art at the time of the
invention to include an overload notification such as that described by
Rochberger in a network system such as that taught by Guerrero. Guerrero's
system would benefit, as it could notify other devices when the address limit
within a table has been reached, relieving the processing required for rejecting
additional addresses sent. The notification method described by Rochberger can
be used in any system, as it only describes how a node reacts to being in an
overload state, and does not affect the performance of the node in normal
functions. This would allow the notification method to be used in any system,

including that taught by Guerrero, and with any routing protocols, such as those
taught by Hunt.

Allowable Subject Matter

16.   Claims 11-15, 18-26, and 33-41 are allowed.

17.   As per claim 11, a method comprising:

receiving at a network device an export limit command from a client; and

counting, in response to the export limit command, a number of routes
exported from an exterior routing protocol process executing on the
network device to an interior routing protocol process executing on the
network device.

Cited prior art teaches counting and limiting a number of routes on a table, but
there is not a teaching or motivation presented in the cited prior art to count and
limit the number of routes in response to a command from a client. Guerrero
teaches limiting the routes based on a preset maximum table size. Breitbart (US
2002/0147842) teaches a method for limiting the number of aggregates in a table
based on a predefined weight threshold (page 3, paragraph [0038]). Other
references in the art teach limiting based on deletion of old routes or aggregating
old routes, but the limits are similarly predefined.

18.   As per claim 18, a system comprising:

a management interface to receive a command that specifies an export
limit; and

a control unit that limits a number of routes exported to an interior routing
protocol in accordance with the export limit.

Cited prior art teaches counting and limiting a number of routes on a table, but

there is not a teaching or motivation presented in prior art to count and limit the

number of routes in response to a command from a client. Guerrero teaches

limiting the routes based on a preset maximum table size. Breitbart (US

2002/0147842) teaches a method for limiting the number of aggregates in a table

based on a predefined weight threshold (page 3, paragraph [0038]). Other

references in the art teach limiting based on deletion of old routes or aggregating

old routes, but the limits are similarly predefined.

19.   As per claim 33, a method comprising:

          receiving a command to direct a network device to count routes exported

          from an exterior routing protocol to an interior routing protocol;

          receiving an export limit indicative of a maximum number of routes that

          may be exported from the exterior routing protocol to a specific instance of

          the interior routing protocol;

          exporting routes from the exterior routing protocol to the specific instance

          of the interior routing protocol;

          incrementing a prefix count each time a route is exported from the exterior

          routing protocol to the specific instance of the interior routing protocol;

          comparing the prefix count to the export limit; and

          rejecting additional routes from the exterior routing protocol if the prefix

          count exceeds the export limit.

Cited prior art teaches counting and limiting a number of routes on a table, but

there is not a teaching or motivation presented in the cited prior art to count and

limit the number of routes in response to a command from a client. Guerrero

teaches limiting the routes based on a preset maximum table size. Breitbart (US

2002/0147842) teaches a method for limiting the number of aggregates in a table

based on a predefined weight threshold (page 3, paragraph [0038]). Other

references in the art teach limiting based on deletion of old routes or aggregating

old routes, but the limits are similarly predefined.

20.   As per claim 34, a system, comprising:

        data defining an export limit corresponding to a maximum number of

        routes that may be exported from an exterior routing protocol to an interior

        routing protocol; and

        a prefix counter that maintains a prefix count corresponding to a total

        number of routes exported from the exterior routing protocol in response

        to a command.

Cited prior art teaches counting and limiting a number of routes on a table, but

there is not a teaching or motivation presented in the cited prior art to count and

limit the number of routes in response to a command from a client. Guerrero

teaches limiting the routes based on a preset maximum table size. Breitbart (US

2002/0147842) teaches a method for limiting the number of aggregates in a table

based on a predefined weight threshold (page 3, paragraph [0038]). Other

references in the art teach limiting based on deletion of old routes or aggregating

old routes, but the limits are similarly predefined.

21.   As per claim 37, a network device comprising:

> a first routing protocol module and a second routing protocol module,
>
> wherein the first routing protocol module exports network routes to the
>
> second routing protocol module;
>
> an interface to receive a command that specifies an export limit; and
>
> a control unit that prevents the first routing protocol module from exporting
>
> more than the export limit of the network routes to the second routing
>
> module.

Cited prior art teaches counting and limiting a number of routes on a table, but there is not a teaching or motivation presented in the cited prior art to count and limit the number of routes in response to a command from a client. Guerrero teaches limiting the routes based on a preset maximum table size. Breitbart (US 2002/0147842) teaches a method for limiting the number of aggregates in a table based on a predefined weight threshold (page 3, paragraph [0038]). Other references in the art teach limiting based on deletion of old routes or aggregating old routes, but the limits are similarly predefined.

22.   Claims 3, 4, 7, 8, 10, 17, 28, 29, 30 and 32 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

23.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 2003/0154304, Pesce et al teaches a method and system for sharing routing information including exporting routes to and from OSPF and other interior routing protocols.

US 2005/0044198, Okitsu et al teaches a method of controlling total disk usage.

US 2002/0147842, Breitbart et al teaches a system and method for optimizing OSPF aggregates.

US 2002/0078223, Baldonado et al teaches a method and apparatus for performance and cost optimization in a network.

US 7 085 241, O'Neill et al teaches a method of controlling routing of packets in a network with link state advertisements.

US 7 289 437, Chiruvolu teaches a system and method for routing using link state notifications and monitoring flags.

US 7 174 387, Shand et al teaches a method and apparatus for requesting link state information with status flags.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS RICHARDSON whose telephone number is (571)270-1191. The examiner can normally be reached on Monday through Thursday, 8am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Taghi Arani can be reached on (571) 272-3787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information

for published applications may be obtained from either Private PAIR or Public

PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free). If you would like assistance from a USPTO Customer Service

Representative or access to the automated information system, call 800-786-

9199 (IN USA OR CANADA) or 571-272-1000.

TR

/George C. Neurauter, Jr./
Primary Examiner, Art Unit 2143